

Register 3 CONTENTS - AKH3

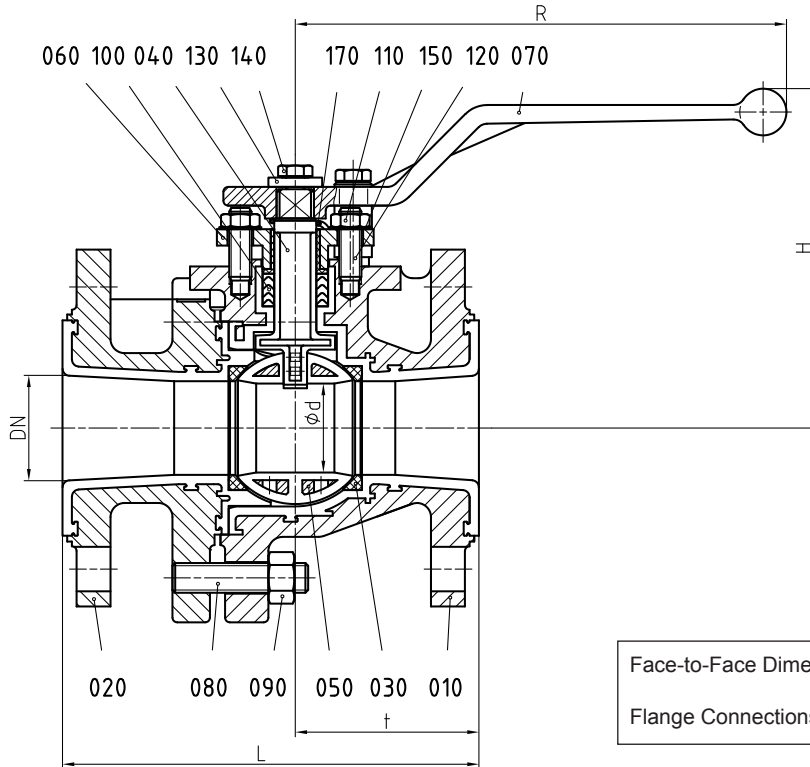


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Technical Data AKH3



Face-to-Face Dimensions ISO 5752 Tab. 6, short
 ANSI B 16.10, short
 Flange Connections ANSI B 16.5 - 150lbs

DN / ANSI	L	H	R	t	Ød	weight
1"	inch 5	4,72	6,3	2,2	0,79	lbs 9,7
	mm 127	120	160	56	20	kg 4,4
1½"	inch 6,5	4,72	6,3	3,05	0,94	lbs 13,7
	mm 165	120	160	77,5	24	kg 6,2
2"	inch 7	5,71	8,27	3,09	1,50	lbs 23,3
	mm 178	145	210	78,5	38	kg 10,6
3"	inch 8	6,3	8,27	3,7	1,89	lbs 35,5
	mm 203	160	210	94	48	kg 16,1
4"	inch 9	8,07	12,32	4,13	3,15	lbs 66,4
	mm 229	205	313	105	80	kg 30,2
6"	inch 10,5	8,66	12,32	5,28	3,94	lbs 110,4
	mm 267	220	313	134	100	kg 50,2
8"	inch 11,5	12,28	13,27°	5,08	5,79	lbs 234,8
	mm 292	312	337°	129	147	kg 106,6
10"	inch 13	14,69	17,72°	6,1	7,68	lbs 382,6
	mm 330	373	450°	155	195	kg 173,7
12"	inch 14	14,29	17,72°	6,95	7,68	lbs 521,4
	mm 356	363	450°	176,5	195	kg 237,0
14***	inch 15	--	--	7,5	9,65	lbs 705,3
	mm 381	--	--	190,5	245	kg 320,0

°° pass-through handlever Ø 26,54 inch standard
 ° pass-through handlever Ø 35,43 inch standard
 * ball valve only manual actuator (weight without actuator)

Material specification AKH3

No.	Designation	Pieces	Material	Material-No. / DIN	ASTM / AISI
010	body	1	ductile iron / PFA ° ductile iron / FEP °	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
020	side piece	1	ductile iron / PFA ° ductile iron / FEP °	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
030	seat ring	2	PTFE	pure - PTFE	
040	stem	1	stainless steel / PFA Hastelloy C4 / PFA **	1.4470 / DIN EN 10283 2.4610 / DIN 17744	A 890 CD3MN
050	ball				
	DN 1" - 3"	1	tool steel, alloyed / PFA ° tool steel, alloyed / FEP °	1.2343 / DIN EN ISO 4957	A 646-95 (Gr. 10)
	DN 4" - 14"	1	ductile iron / PFA ° ductile iron / FEP ° ceramic Al ₂ O ₃ * MG-PSZ DN 8"	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
065	gland insert	1	PTFE-graphite		
070	hand lever				
	DN 1" - 3"	1	die cast metall	ZP0410 / DIN EN 12844	
	DN 4", 6"	1	ductile iron (galvanized)	EN-GJS-50-7 (GGG-50)	
	T - hand lever				
	DN 8" - 12"	1	steel (chromated)	1.0037 / DIN EN 10025-2	A 283 B
080	stud bolt	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 193 B8
090	hexagon nut	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 194 8
100	packing material (chevron)	1 set	PTFE ° PTFE-graphite °		
110	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
120	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
130	lock washer	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
140	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
150	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
170	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
210	stop °°				
	DN 1" - 3"	1	steel (galvanized)	1.0037 / DIN EN 10025-2	A 283 B
	DN 4" - 12"	1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430 F
220	hexagon bolt °°	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8

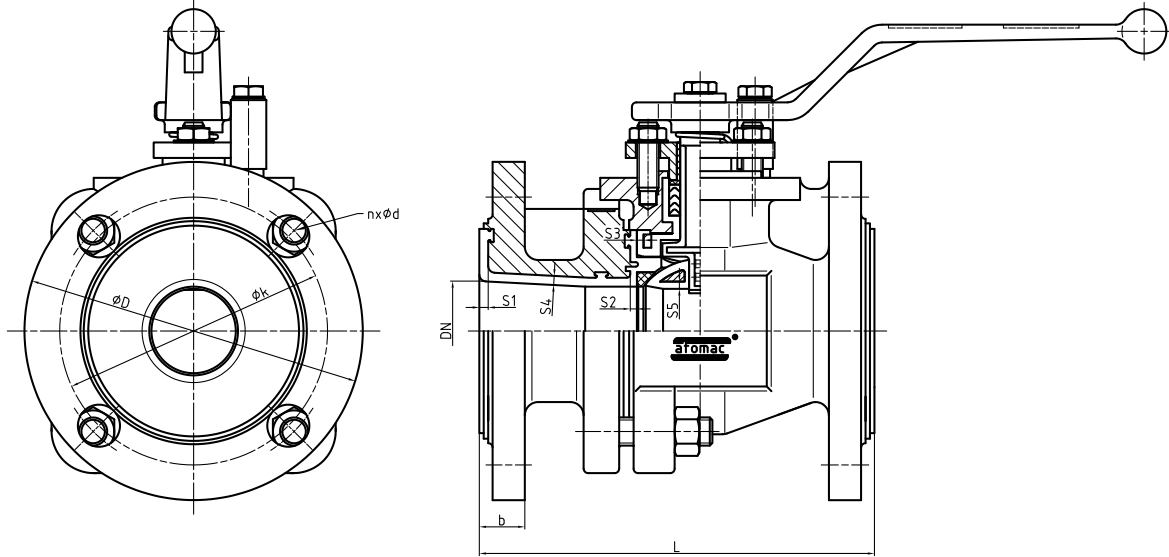
* ceramic ball on request (available up to DN 8")

** Hastelloy stem on request

° optional

°° DN 8" and 10" tow exemplar

Dimensions AKH3



DN / ANSI		L	b	ØD	Øk	nxØd	S1	S2	S3	S4	S5
1"	inch	5	0,63	4,25	3,12	4x0,63	0,12	0,10	0,10	0,14	0,10
	mm	127	16	108	79,2	4x16	3	2,5	2,5	3,5	2,5
1½"	inch	6,5	0,77	5	3,88	4x0,63	0,16	0,10	0,11	0,14	0,10
	mm	165	19,5	127	98,5	4x16	4	2,5	2,8	3,5	2,5
2"	inch	7	0,81	6	4,75	4x0,75	0,16	0,12	0,12	0,16	0,12
	mm	178	20,5	152,4	120,5	4x19	4	3	3	4	3
3"	inch	8	0,92	7,5	6	4x0,75	0,16	0,16	0,14	0,2	0,12
	mm	203	23,25	190,5	152,5	4x19	4	4	3,5	5	3
4"	inch	9	1,14	9	7,5	8x0,75	0,16	0,16	0,16	0,2	0,17
	mm	229	29	228,6	190,5	8x19	4	4	4	5	4,25
6"	inch	10,7	1,24	11	9,5	8x0,87	0,16	0,2	0,16	0,2	0,18
	mm	267	31,5	279,4	241,5	8x22	4	5	4	5	4,5
8"	inch	11,5	1,3	13,5	11,75	8x0,87	0,16	0,2	0,16	0,23	0,22
	mm	292	33	342,9	298,5	8x22	4	5	4	6	5,5
10"	inch	13	1,4	16	14,25	12x1	0,16	0,2	0,16	0,23	0,22
	mm	330	36	406,5	361,9	12x25	4	5	4	6	5,5
12"	inch	14	1,69	19	17	12x1	0,16	0,2	0,16	0,23	0,22
	mm	356	43	482,6	431,8	12x25	4	5	4	6	5,5
14"	inch	15	1,56	21	18,76	12x1,12	0,18	0,2	0,18	0,24	0,24
	mm	381	39,5	533,5	476,5	12x28,5	4,5	5	4,5	6	6

stem lining DN 1", 1½" 0,059 inch
 all other sizes at least 0,098 inch



Spare Parts (item n°) - AKH3 Standard Version

ANSI	Ball			Seat Rings
	FEP	PFA	Ceramic°	PTFE
1"	0000267	0000322	0002316	0000159
1½"	0000268	0000323	0002317	0000159
2"	0000270	0000325	0002319	0000160
3"	0000271	0000326	0002320	0000161
4"	0000273	0000328	0002322	0000163
6"	0000274	0000329	0002323	0000164
8"	0000275	0000330	0002405	0000165
10"	0000276	0000331	---	0000166
12"	0000276	0000331	---	0000166
14"	0011249	0010845	---	0011250

ANSI	Stem		Packing (set)	
	Stainless Steel PFA	Hastelloy PFA	PTFE	PTFE / Graphite
1"	0000113	0000114	0000167	0000174
1½"	0000115	0000116	0000167	0000174
2"	0000117	0000118	0000168	0000175
3"	0000119	0000120	0000169	0000176
4"	0000121	0000122	0000170	0000177
6"	0000121	0000122	0000170	0000177
8"	0000123	0000124	0000172	0000179
10"	0000125	0000126	0000173	0000180
12"	0000125	0000126	0000173	0000180
14"	0010843	---	0011251	0011252

° Al₂O₃

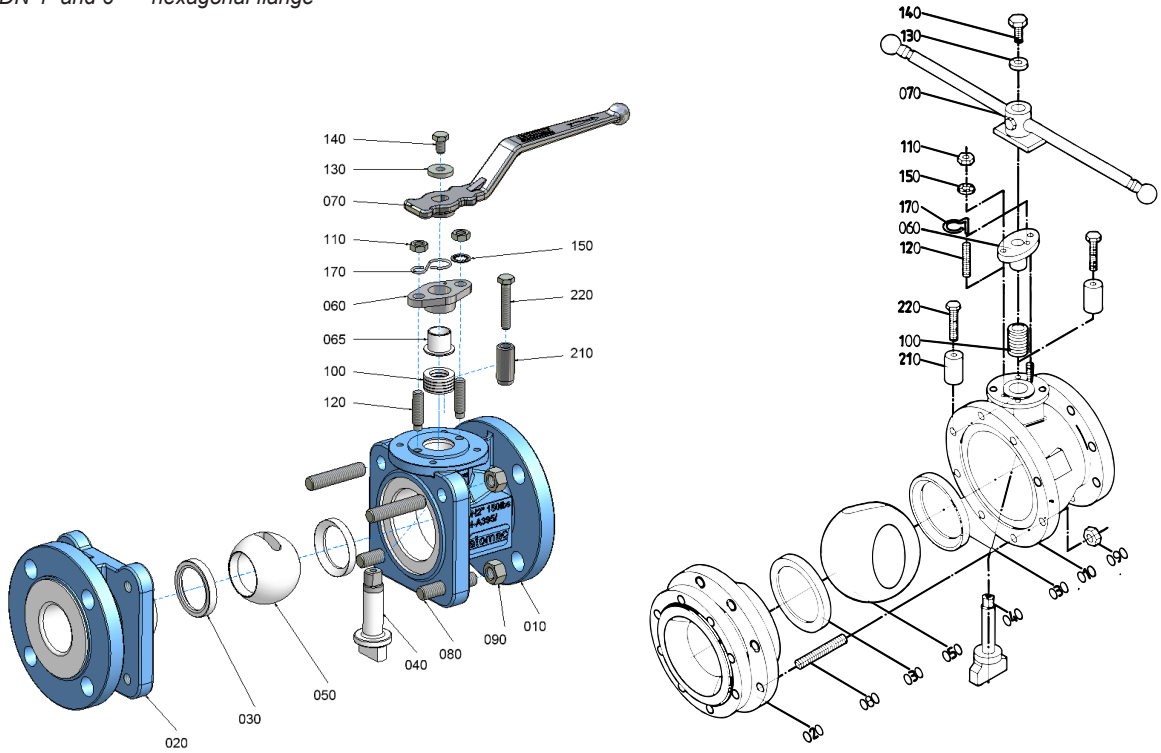
Assembly Instructions AKH3

The general installation and maintenance instructions must be observed.

1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of body in such a way that the flat side is parallel to body longitudinal axis.
3. Insert chevron packing (100).
4. Install gland insert (065), gland follower (060), safety washers (150), hexagon nuts (110) and grounding strap (170) also on valves with actuator.
5. Install hand lever (070) on to stem (040) and tighten it using lock washer (130) and hexagon bolt (140).
6. Insert first ball seat ring (030) into body (010).
7. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
8. Turn hand lever 90° of longitudinal axis of body.
9. Install second ball seat ring (030) on to ball (050).
10. Install side piece (020) on to body (010), making sure that recess for stem is on the correct side.
11. Install body bolts (080) and hexagon nuts (090) and tighten by crisscross method to recommended torques.
12. Assemble stop (210) with hexagon bolt (220).
13. Make sure that the valve DN 10" is in open position when it is installed into the piping system.

DN 1" - 3" = square flange
 DN 4" and 6" = hexagonal flange

DN8" and 10"



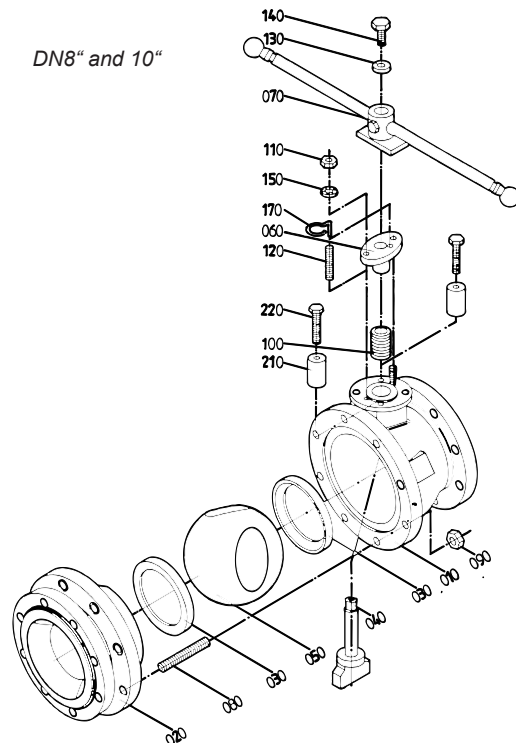
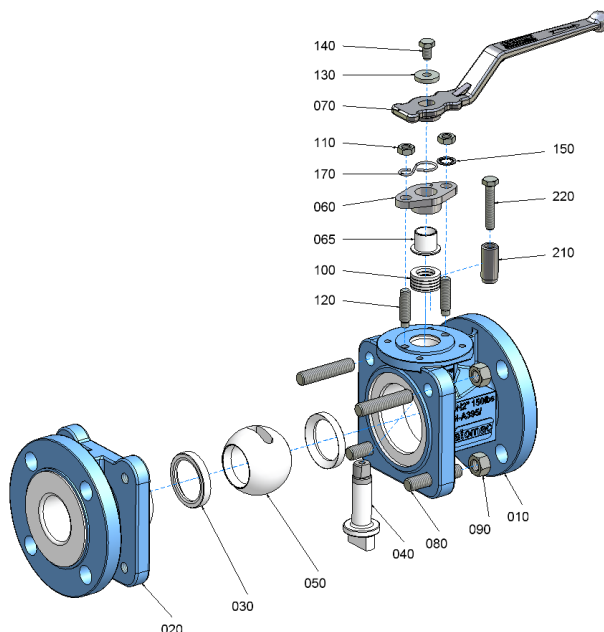
Disassembly Instructions for AKH3

For all jobs which are to be carried out on an installed valve, the works safety requirements and the general accident prevention instructions must be observed. Moreover, the general installation and maintenance instructions for atomac fluorocarbon resin lined valves must be considered.

1. Prior to disassembly, the valve must be cleared of all fluid according to the above-mentioned instructions. Particular care must be taken that during rinsing and draining of the piping, the valve is opened and closed repeatedly. These cycles (opening and closing) are to be repeated during draining of the piping. Only when following this procedure, is it ensured that all remaining pressure inside the body (stem guide and ball seats) is eliminated. Make sure that the valve DN 10" is in open position when it is removed of the piping system.
2. For disassembly of the valve, put body on a work bench with a soft cover (rubber mat). Remove hexagon bolt (110) and lock washer (150).
3. Open valve completely. Remove hand lever.
4. Disassemble grounding device (170).
5. Disassemble gland follower (060) and gland insert (065). If necessary, stud bolts (120) can also be removed now.
6. Remove body bolts (080) and separate side piece from body.
7. Remove first ball seat ring (030).
8. Put ball in closed position and push ball out of the body. Remove hand lever (070).
9. Remove stem (040) by pushing it down through the body (010). Care must be taken not to damage body liner.
10. Chevron packing (100) can easily be removed.
11. If necessary, remove hand lever stop (210) by releasing bolt (220).

DN 1" - 3" = square flange
 DN 4" and 6" = hexagonal flange

DN 8" and 10"



AKH3 - recommended tightening torques*

DN	tie rods (080/090)		connection flange		gland bolts (110/120/150)	
	Nm	in.lbs	Nm	in.lbs	Nm	in.lbs
1"	18	159	16	142	4	35
1½"	18	159	33	292	4	35
2"	35	310	64	566	7	62
3"	47	416	105	929	7	62
4"	70	620	81	717	8	71
6"	113	1000	139	1230	8	71
8"	180	1593	188	1664	12	106
10"	280	2478	223	1972	15	133
12"	280	2478	316	2797	15	133
14"	315	2788	308	2726	15	133

* maximum value

Manual Actuator

(worm gear)

The fully closed, waterproof actuator consists of a body with lid, worm gear, input shaft and hand wheel. For the correct adjustment of the ball position, there are two adjustable stops mounted in the body.

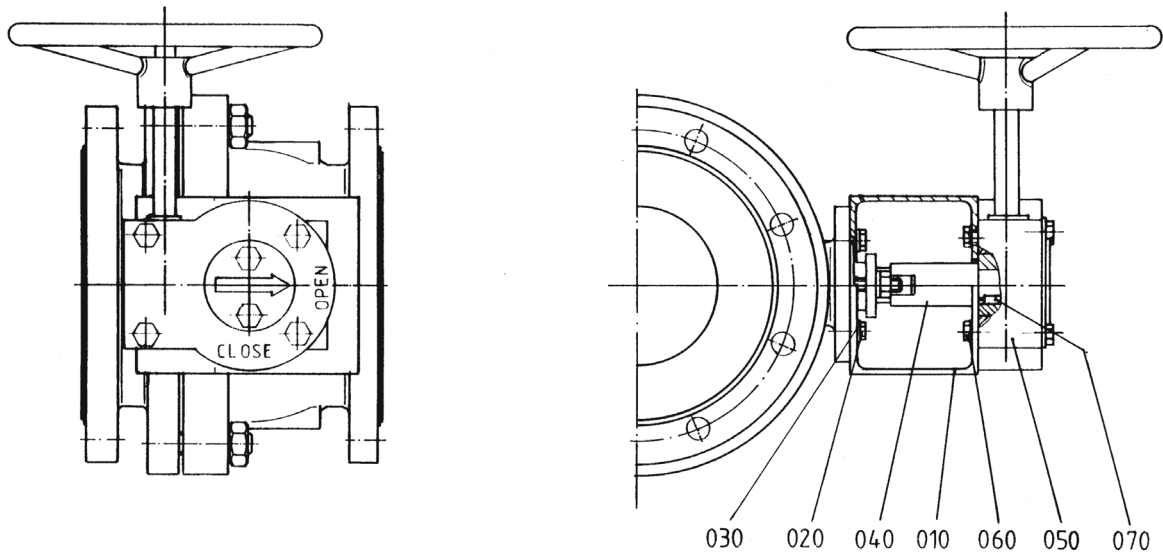
The gear is fully greased and does not need any further lubrication.

The actuator with hand wheel is mounted on a bracket with four stainless steel bolts. The on/off position is indicated through a pointer. The actuator is self-locked.

Material specification

Designation	Material
Body	Gray Iron
Worm	Spheroidal Graphite Cast Iron
Input Shaft	AISI 410
Hand Wheel	Steel

Material specification - AKH3 with manual actuator



No.	Designation	Pieces	Material	Material No.	DIN	ASTM / AISI
010	actuator bracket	1	steel	1.0037	DIN EN 10025-2	A 283 B
020	hexagon bolt	4	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
030	serrated lock washer	4	stainless steel	1.4301	DIN EN 10088-3	AISI 304
040	adapter	1	stainless steel	1.4104	DIN EN 10088-3	AISI 430 F
050	actuator	1				
060	hexagon bolt	4	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
070	key	1	steel	1.0050	DIN EN 10277-1	A 572 GR 50

AKH3 - Actuator Sizing Torques

Packingmaterial: chevron PTFE or PTFE-graphite

- **for clean and clear application**

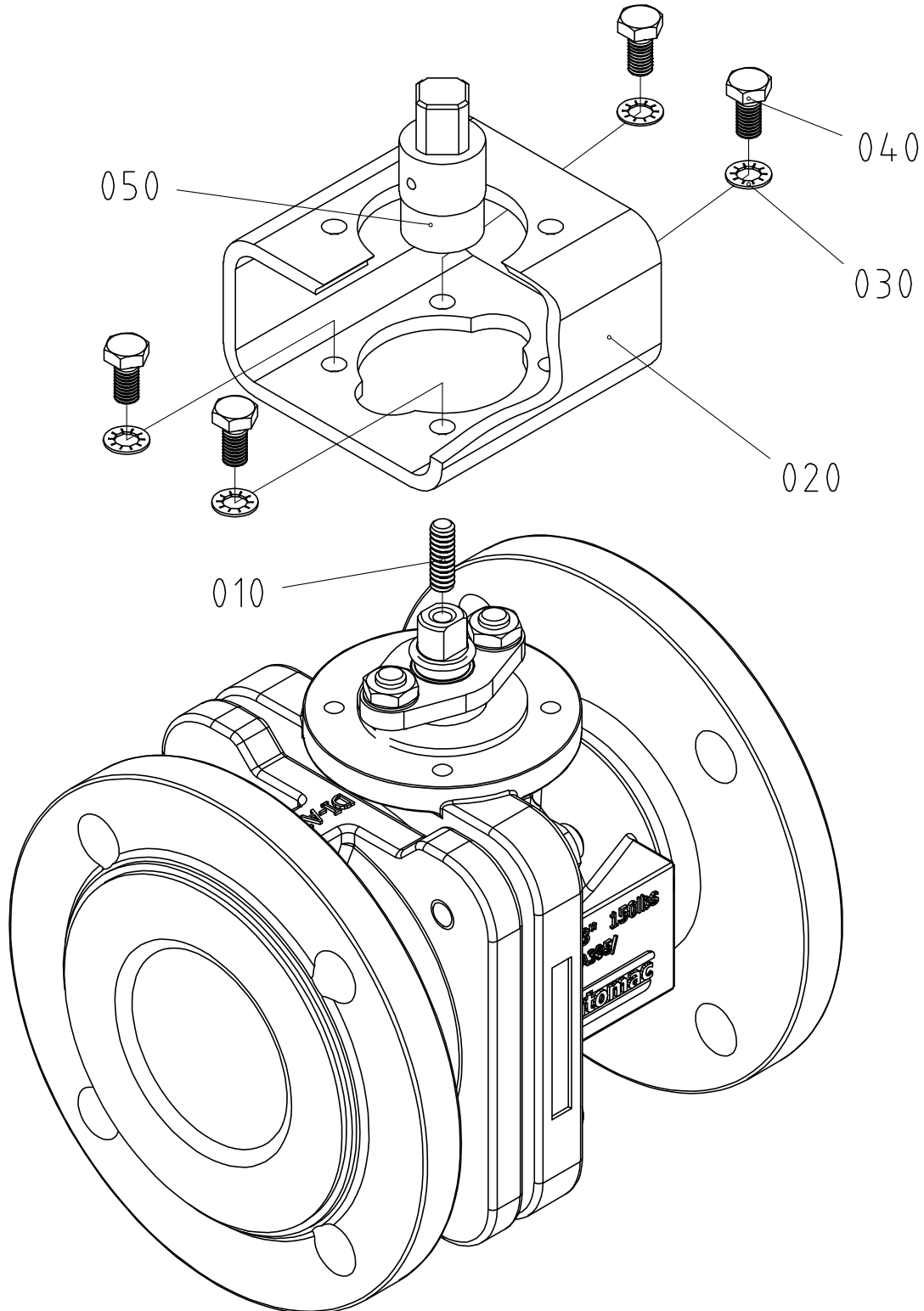
Size	0 bar Δ p Nm	0 psi Δ p in/ lbs	10 bar Δ p Nm	150 psi Δ p in/lbs	19 bar Δ p Nm	275 psi Δ p in/lbs	MAST	
							Nm	in/lbs
1"	7	62	7	62	8	71	40	354
1½"	7	62	8	71	8	71	40	354
2"	20	177	27	239	34	301	115	1018
3"	27	239	34	301	45	398	130	1151
4"	59	522	85	752	108	956	420	3717
6"	79	699	119	1053	158	1398	420	3717
8"	210	1859	300	2655	360	3186	1107	9798
10"	480	4248	700	6196	900	7966	2180	19295
12"	480	4248	700	6196	900	7966	2180	19295
14"	600	5310	1430	12657	1760	15577	8355	73948

- **for dry and slurry application**

Size	0 bar Δ p Nm	0 psi Δ p in/ lbs	10 bar Δ p Nm	150 psi Δ p in/lbs	19 bar Δ p Nm	275 psi Δ p in/lbs	MAST	
							Nm	in/lbs
1"	9	81	9	81	10	92	40	354
1½"	9	81	10	92	10	92	40	354
2"	26	230	35	311	44	391	115	1018
3"	35	311	44	391	59	518	130	1151
4"	77	679	111	978	140	1243	420	3717
6"	103	909	155	1369	205	1818	420	3717
8"	273	2416	390	3452	468	4142	1107	9798
10"	624	5523	910	8054	1170	10355	2180	19295
12"	624	5523	910	8054	1170	10355	2180	19295
14"	780	6904	1859	16454	2288	20251	8355	73948

- Stated torques are sizing torques. No further safety factors are to be applied against these torques.
- The use of ceramic balls in lined valves will result in 15% higher sizing torques.
- The use of C-Balls or V-Balls does not result in change in sizing torques.
- Stated sizing torques are „Break-Open“ and „Re-Seating“ torques. Running torques are typically 35% below sizing torques.
- The stated „MAST“ value is the Maximum Allowable Stem Torque. Beyond this value permanent deformation / destruction of liner is to be expected.
- Please note the service conditions of the pressure- / vacuum-temperature-diagrams: register 1, page 13.

AKH3 with actuator mounting

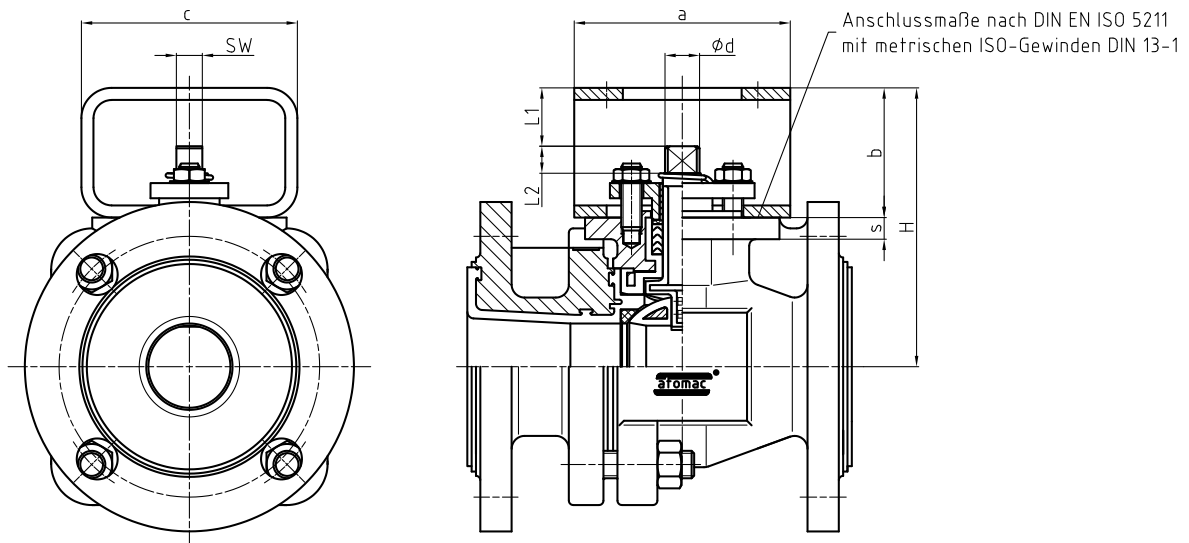


Material specification - AKH3 with actuator mounting

No.	Designation	Pieces	Material	Material-No.	DIN	ASTM / AISI
010	threaded pin	1	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
020	actuator bracket	1	steel (yellow chromated)	1.0037	DIN EN 10025-2	A 283-B
030	serrated lock washer	4	stainless steel	1.4301	DIN EN 10088-3	AISI 304
040	hexagon bolt	4	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
050	adaptedr	1	stainless steel	1.4304	DIN EN 10088-3	AISI 430F

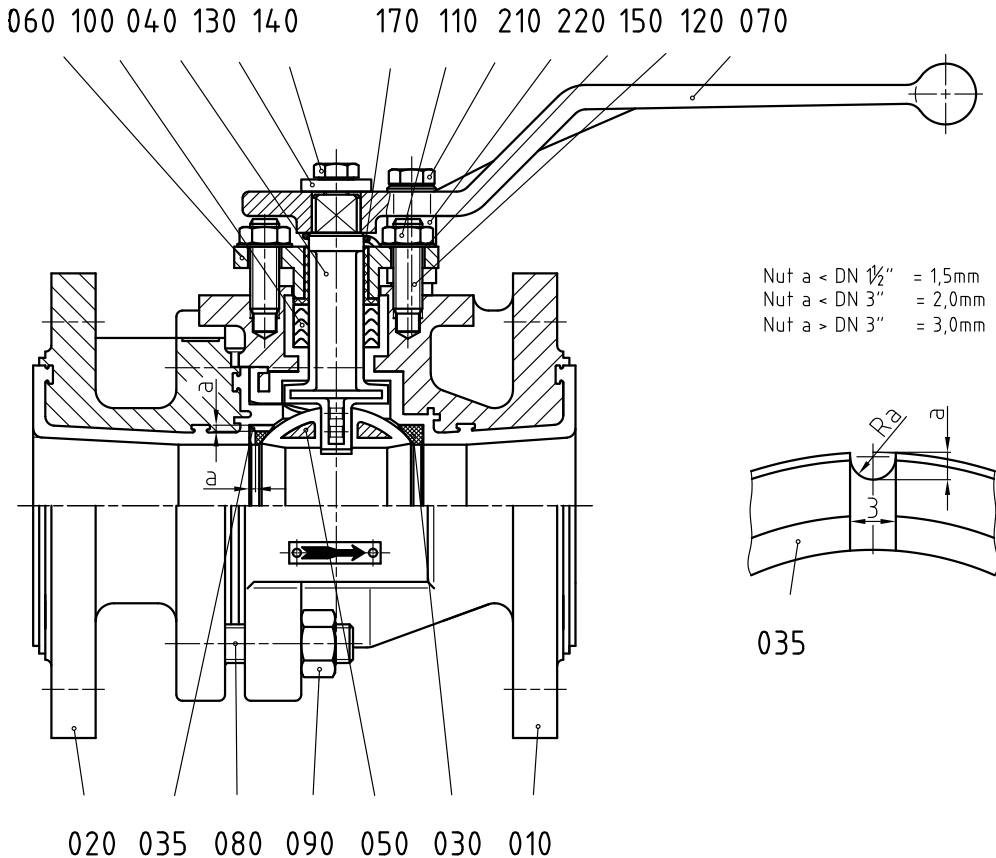
Item-No. 010 "threaded pin" is used with sizes DN 20, 25, 40 and 1", 1½" only.

AKH3 - Dimension sheet for actuator mounting acc. to NAMUR - recommendation



ANSI		H	a	b	c	SW	Ød		S	L1	L2	DIN EN
							+0,1 -0,1	0 -0,1				ISO 5211
												ISO 5211
1"	mm	107,5	75	60	100	8	10	6	33,5	7,5	F05	
	inch	4,23	2,95	2,36	3,94	0,315	0,394	0,24	1,32	0,3	F05	
1½"	mm	109	75	60	100	8	10	6	30,5	9,3	F05	
	inch	4,29	2,95	2,36	3,94	0,315	0,394	0,24	1,2	0,4	F05	
2"	mm	129	100	60	100	12	16	10	25,5	12,5	F07	
	inch	5,08	3,94	2,36	3,94	0,472	0,63	0,39	1	0,49	F07	
3"	mm	142	100	60	100	12	16	10	23	12,5	F07	
	inch	5,59	3,94	2,36	3,94	0,472	0,63	0,39	0,91	0,49	F07	
4"	mm	207	135	80	140	16	22	13	33	15,5	F10	
	inch	8,15	5,31	3,15	5,51	0,63	0,866	0,51	1,3	0,61	F10	
6"	mm	222	135	80	140	16	22	13	34	15,5	F10	
	inch	8,74	5,31	3,15	5,51	0,63	0,866	0,51	1,34	0,61	F10	
8"	mm	284	135	80	140	20	30	14	23	19,5	F12	
	inch	11,18	5,31	3,15	5,51	0,787	1,181	0,55	0,91	0,77	F12	
10"	mm	376	225	120	220	27	40	14	61	19,5	F12	
	inch	14,8	8,86	4,72	8,66	1,06	1,575	0,55	2,4	0,77	F12	
12"	mm	376	225	120	220	27	40	14	61	19,5	F12	
	inch	14,8	8,86	4,72	8,66	1,06	1,575	0,55	2,4	0,77	F12	
14"	mm	421	225	120	220	36	50	20	32	35	F14	
	inch	16,57	8,86	4,72	8,66	1,42	1,97	0,79	1,26	1,38	F14	

AKH3/DA
Seat ring with pressure compensation grooves
Special Recleaning and Packing Procedures



1. Recleaning

The ball valve should be thoroughly cleaned with a clean, dry, lint-free towel and blown off with dry nitrogen gas. This will assure that the valve is free from moisture, grease and other media before packing.

2. Packing

Prior to packing, the ball valve should be jig welded in a PE-foil (0.2 mm thick). The bag contains desiccants acc. to DIN 55473, quantity acc. to DIN 55474 and a moisture indicator.

Material specification AKH3/DA

No.	Designation	Pieces	Material	Material-No. / DIN	ASTM / AISI
010	body	1	ductile iron / PFA ° ductile iron / FEP °	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
020	side piece	1	ductile iron / PFA ° ductile iron / FEP °	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
030	seat ring	1	PTFE	pure - PTFE	
035	seat ring with pressure compensation grooves	1	PTFE	pure - PTFE	
040	stem	1	stainless steel / PFA Hastelloy C4 / PFA **	1.4470 / DIN EN 10283 2.4610 / DIN 17744	A 890 CD3MN
050	ball				
	DN 1" - 3"	1	tool steel, alloyed / PFA ° tool steel, alloyed / FEP °	1.2343 / DIN EN ISO 4957	A 646-95 (Gr. 10)
	DN 4" - 12"	1	ductile iron / PFA ° ductile iron / FEP ° ceramic Al ₂ O ₃ * MG-PSZ DN 8"	EN-JS1049 (GGG-40.3) / DIN EN 1563	A 395
060	gland follower	1	stainless steel	1.4308 / DIN EN 10283	A 743 CF-8
065	gland insert	1	PTFE-graphite		
070	hand lever				
	DN 1" - 3"	1	die cast metall	ZP0410 / DIN EN 12844	
	DN 4", 6"	1	ductile iron (galvanized)	EN-GJS-50-7 (GGG-50)	
	T - hand lever				
	DN 8" - 12"	1	steel (chromated)	1.0037 / DIN EN 10025-2	A 283 B
080	stud bolt	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 193 B8
090	hexagon nut	1 set	stainless steel	1.4301-K70 / DIN EN 10088-3	A 194 8
100	packing material (chevron)	1 set	PTFE ° PTFE-graphite °		
110	hexagon nut	2	stainless steel	1.4301 / DIN EN 10088-3	A 194 8
120	stud bolt	2	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
130	lock washer	1	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
140	hexagon bolt	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8
150	serrated lock washer	2	stainless steel	1.4301 / DIN EN 10088-3	AISI 304
170	grounding device	1	stainless steel	1.4310 / DIN EN 10270-3	AISI 301
210	stop °°				
	DN 1" - 3"	1	steel (galvanized)	1.0037 / DIN EN 10025-2	A 283 B
	DN 4" - 12"	1	stainless steel	1.4104 / DIN EN 10088-3	AISI 430 F
220	hexagon bolt °°	1	stainless steel	1.4301 / DIN EN 10088-3	A 193 B8

* ceramic ball on request (available up to DN 8")

** Hastelloy stem on request

° optional

°° DN 8" and 10" tow exemplar

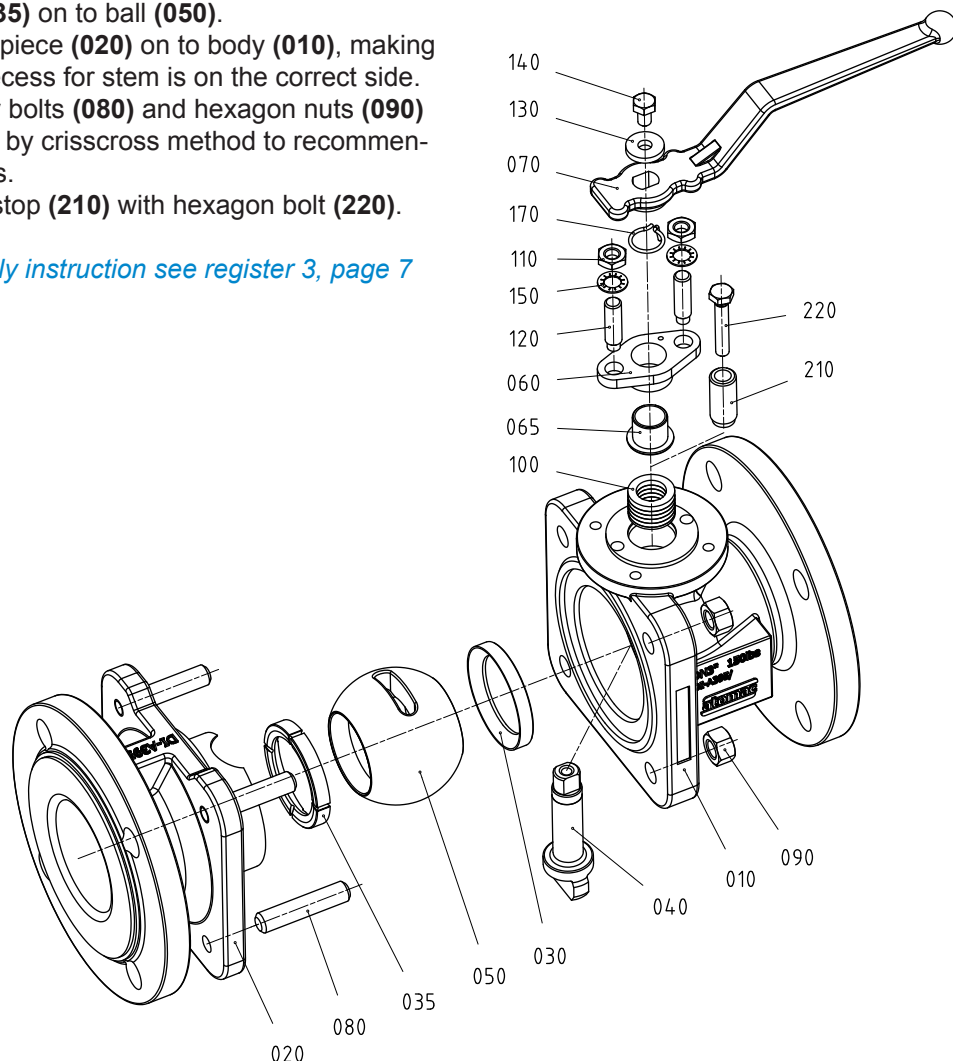
Assembly Instructions AKH3/DA

The general installation and maintenance instructions must be observed.

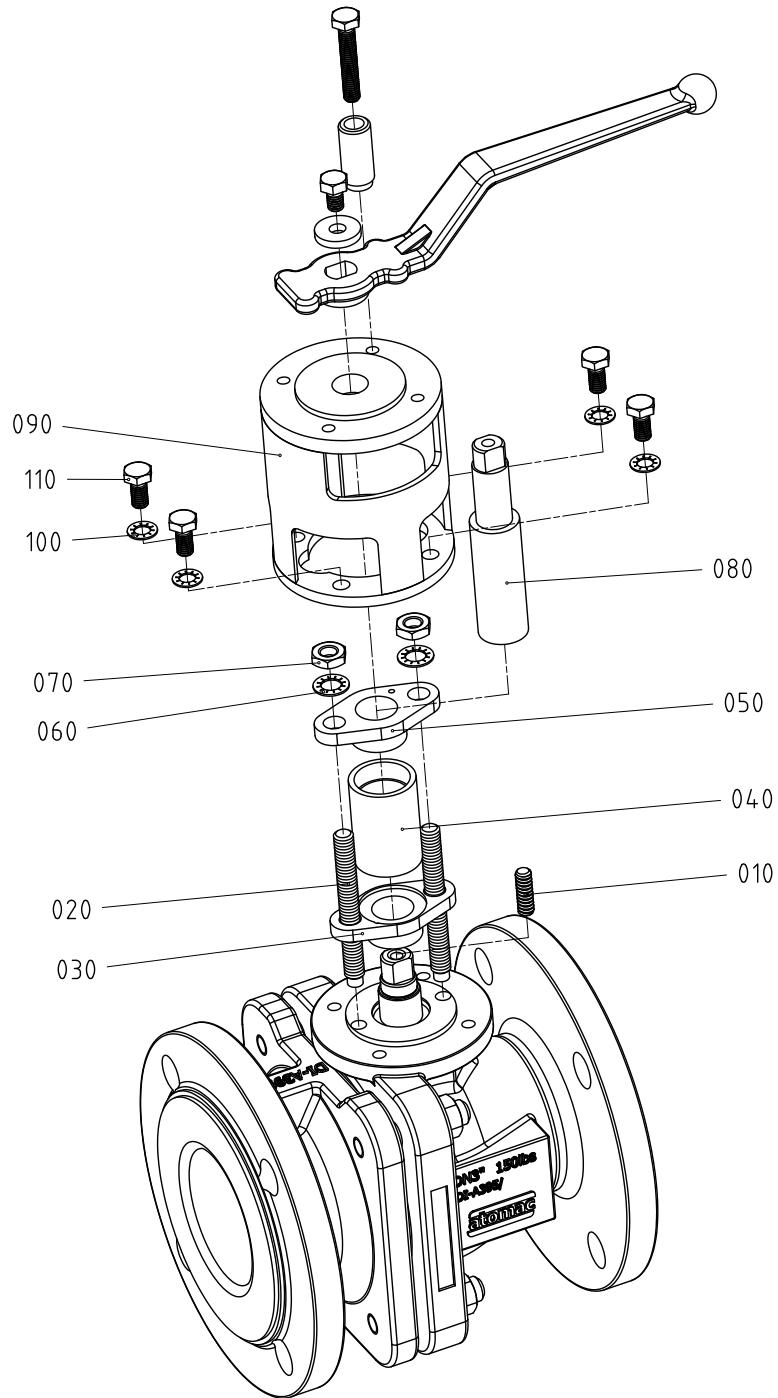
Attention, please take care of the right direction of the indicator while assembly.

1. Screw stud bolts (120) into body (010).
2. Insert stem (040) from inside of body in such a way that the flat side is parallel to body longitudinal axis.
3. Insert chevron packing (100).
4. Install gland insert (065), gland follower (060), safety washers (150), hexagon nuts (110) and grounding strap (170) also on valves with actuator.
5. Install hand lever (070) on to stem (040) and tighten it using lock washer (130) and hexagon bolt (140).
6. Insert first ball seat ring (030) into body (010).
7. Insert ball (050) to valve stem by pushing the ball in a downward motion through valve body.
8. Turn hand lever 90° of longitudinal axis of body.
9. Install ball seat ring with pressure compensation grooves (035) on to ball (050).
10. Install side piece (020) on to body (010), making sure that recess for stem is on the correct side.
11. Install body bolts (080) and hexagon nuts (090) and tighten by crisscross method to recommended torques.
12. Assemble stop (210) with hexagon bolt (220).

Disassembly instruction see register 3, page 7



AKH3 with stem extension

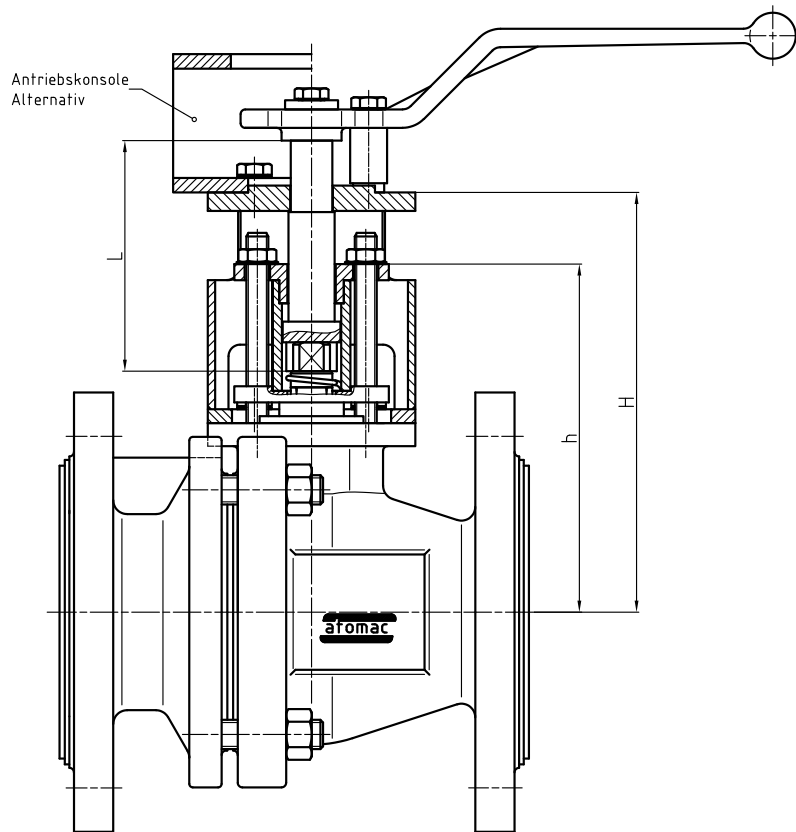


Material specification - AKH3 with stem extension

No.	Designation	Pieces	Material	Material-No.	DIN	ASTM / AISI
010	threaded pin	1	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
020	stud bolt	2	stainless steel	1.4301	DIN EN 10088-3	A 193 B8
030	gland follower	1	stainless steel / PTFE-graphite	1.4308	DIN EN 10283	A 351 CF 8
040	distance piece	1	steel	1.0305	DIN EN 10216-2	A 192
050	gland follower	1	stainless steel	1.4308	DIN EN 10283	A 743 CF 8
060	serrated lock washer	2	stainless steel	1.4301	DIN EN 10088-3	AISI 304
070	hexagon nut	2	stainless steel	1.4301	DIN EN 10088-3	A 194 8
080	extended stem	1	stainless steel	1.4104	DIN EN 10088-3	AISI 430 F
090	mounting	1	steel	1.0037	DIN EN 10025-2	A 283 B
100	serrated lock washer	4	stainless steel	1.4301	DIN EN 10088-3	AISI 304
110	hexagon bolt	4	stainless steel	1.4301	DIN EN 10088-3	A 193 B8

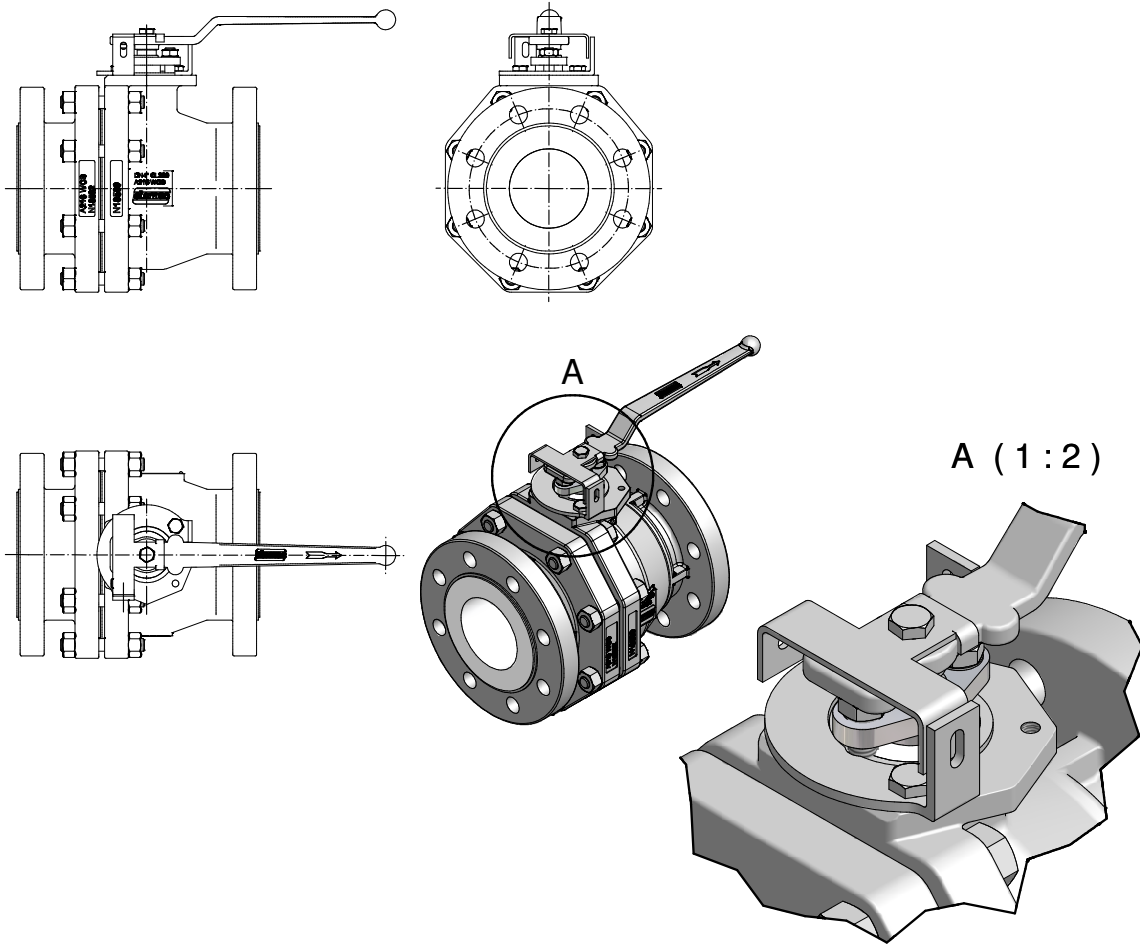
Item - No. 010 "threaded pin" is used with sizes DN 20, 25, 40 and 1", 1½" only.

Technical Data - AKH3 with stem extension



ANSI		L	H	h
1"	mm	100	147,5	124
	inch	3,94	5,81	4,88
1½"	mm	100	149	126
	inch	3,94	5,87	4,96
2"	mm	100	169	138
	inch	3,94	6,65	5,43
3"	mm	100	182	151
	inch	3,94	7,17	5,94
4"	mm	130	256	220
	inch	5,12	10,08	8,66
6"	mm	130	271	235
	inch	5,12	10,67	9,25
8"	mm	160	364	320
	inch	6,3	14,33	12,6

AKH3 with lockable hand lever



Material specification - AKH3 with lockable hand lever

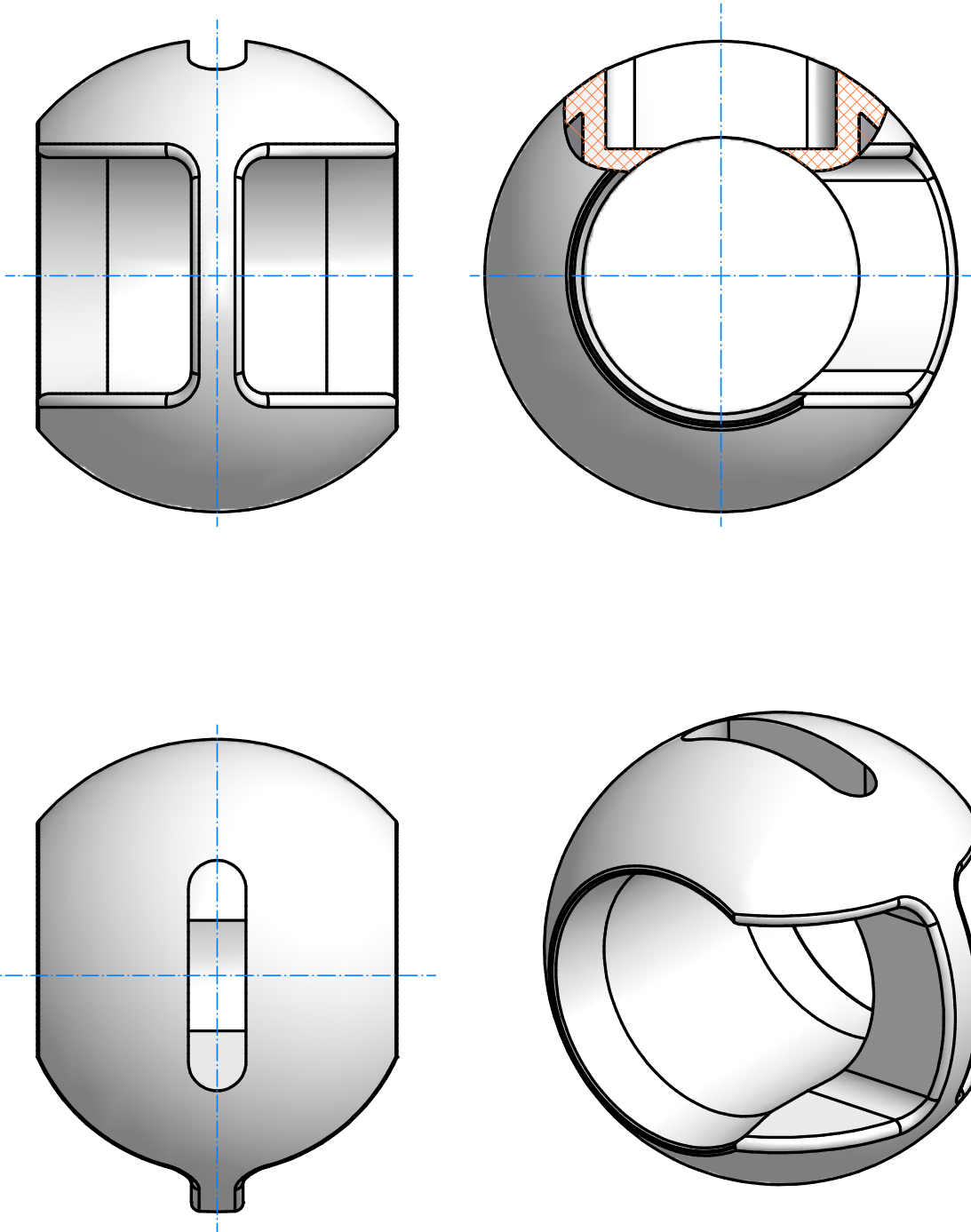
Designation	Pieces	Material	Material-No.	DIN	ASTM / AISI
lockable hand lever	1	stainless steel	1.4301	DIN EN 10088-3	AISI 304
stop bolt	1	stainless steel / duroplastic	1.4301	DIN EN 10088-3	AISI 304

**AKH3* - K_v DATA and C_v Data
(DIN EN 60534-2-3)**

ANSI	K_v m ³ /h	C_v gal/min
1"	31,6	36,7
1 1/2"	44,1	51,3
2"	158,4	184,1
3"	177,5	206,3
4"	580,3	674,5
6"	789,2	917,3
8"	1636,2	1901,6
10"	3652,0	4244,7
12"	2793,0	3246,3
14"	at time not available	

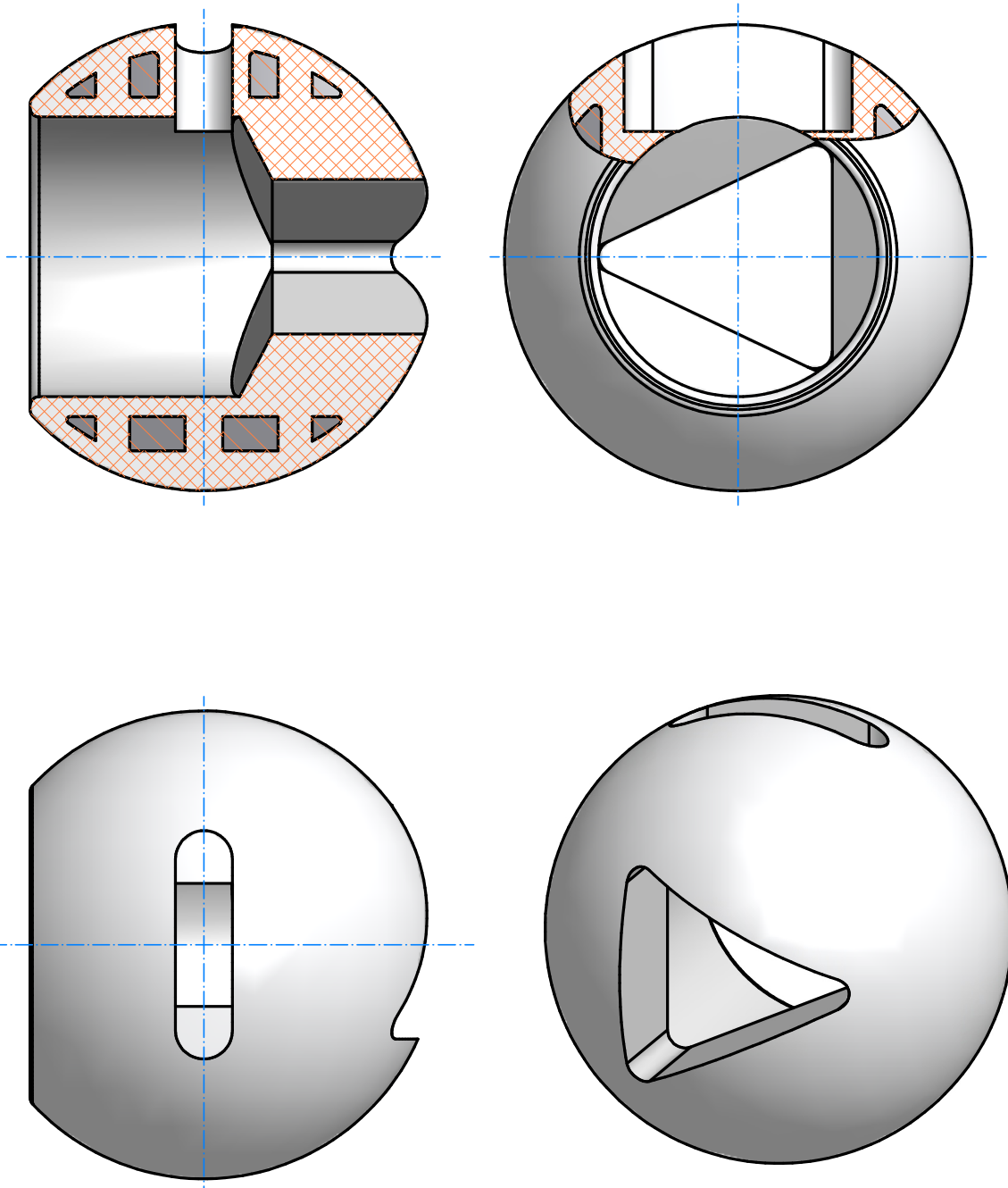
*reduced port

Optional C-ball in ball valves



For details please contact our Sales office at Ahaus, Germany.

Optional V-ball in ball valves



For details please contact our Sales office at Ahaus, Germany.